

**RECEIVED**  
**CENTRAL FAX CENTER**  
**MAY 01 2006**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Patent Application No. 10/018,396

Applicant: Cho-Chung

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**DECLARATION UNDER 37 C.F.R. § 1.132 OF  
YOON S. CHO-CHUNG, M.D., PH.D.**

I, Yoon S. Cho-Chung, do hereby declare:

1. I am the inventor of the subject matter disclosed and claimed in the referenced patent application.
2. The data generated below were generated under my supervision.
3. ECPKA activity levels were measured in a variety of cancer cells using the PKA assay disclosed in the subject application (see, e.g., Example 1). The results of this experiment are set forth in Exhibit A. Several different carcinoma cell types were tested, along with three sarcoma cell lines (see e.g., Exhibit A at pages 2 and 4). Normal control cells included PrEC5500 prostate cells and MCF-10A breast cells. ECPKA activity was elevated in each sarcoma sample, as compared to the average ECPKA level of 12.2 mU/ml observed in normal cells.
4. The cells used in the experiments referenced above were not engineered to constitutively express ECPKA.

Application No. 10/018,396

Declaration Under 37 C.F.R. § 1.132

5. I hereby declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: May 1, 2006



Yoon S. Cho-Chung, M.D., Ph.D.

From Dr. Susan Bates  
1-13-2000 (received)

| Samples    |                        | (CPM)  |      |      | Mean |      | Net  | PKA<br>mU/ml |
|------------|------------------------|--------|------|------|------|------|------|--------------|
| No Samples | Ca.                    | L.D.   | (-)  | (+)  | (-)  | (+)  |      |              |
| 99         | adenocystic            | M38502 | 1266 | 1020 | 512  | 542  | 1143 | 40.7         |
| 91         | bladder                | M37629 | 1613 | 1480 | 963  | 675  | 1547 | 48.0         |
| 123        | breast adenocarcinoma  | M40193 | 1504 | 1666 | 591  | 827  | 1585 | 57.8         |
| 76         | choangiocarcinoma      | M36702 | 867  | 1011 | 557  | 533  | 939  | 26.0         |
| 20         | colon                  | M32830 | 1488 | 1479 | 876  | 858  | 1484 | 40.7         |
| 32         | colon                  | M33708 | 1356 | 1359 | 542  | 511  | 1358 | 54.9         |
| 37         | colon                  | M34057 | 2194 | 1794 | 1391 | 1407 | 1994 | 39.3         |
| 38         | colon                  | M34119 | 1070 | 984  | 465  | 528  | 1027 | 35.0         |
| 41         | colon                  | M34347 | 1165 | 1138 | 767  | 726  | 1152 | 26.7         |
| 51         | colon                  | M35221 | 2167 | 2090 | 1060 | 1209 | 2129 | 65.6         |
| 53         | colon                  | M35236 | 1647 | 1671 | 768  | 699  | 1659 | 61.1         |
| 54         | colon                  | M35362 | 1098 | 1332 | 734  | 898  | 1215 | 26.3         |
| 58         | colon                  | M35615 | 2702 | 2960 | 493  | 720  | 2831 | 146.9        |
| 59         | colon                  | M35633 | 1446 | 1457 | 588  | 575  | 1452 | 57.4         |
| 63         | colon                  | M35803 | 1960 | 2044 | 759  | 879  | 2002 | 78.1         |
| 64         | colon                  | M35929 | 1663 | 1477 | 694  | 777  | 1570 | 55.1         |
| 67         | colon                  | M36078 | 1149 | 992  | 733  | 610  | 1071 | 26.3         |
| 69         | colon                  | M36253 | 1393 | 1619 | 813  | 756  | 1506 | 47.6         |
| 74         | colon                  | M36502 | 1506 | 1981 | 884  | 812  | 1744 | 59.1         |
| 75         | colon                  | M36669 | 2091 | 1938 | 778  | 801  | 2015 | 80.9         |
| 77         | colon                  | M36734 | 1291 | 1768 | 845  | 823  | 1530 | 45.9         |
| 83         | colon                  | M37133 | 1468 | 1451 | 749  | 734  | 1460 | 47.4         |
| 88         | colon                  | M37506 | 1523 | 1825 | 554  | 543  | 1674 | 74.3         |
| 98         | colon                  | M38428 | 1779 | 1929 | 745  | 741  | 1854 | 73.3         |
| 103        | colon                  | M38696 | 1057 | 891  | 542  | 542  | 974  | 28.5         |
| 106        | colon                  | M38925 | 2469 | 1989 | 754  | 865  | 2229 | 93.7         |
| 109        | colon                  | M39044 | 1386 | 1803 | 702  | 745  | 1595 | 57.5         |
| 116        | colon                  | M39491 | 1757 | 1707 | 612  | 648  | 1732 | 72.8         |
| 118        | colon                  | M39752 | 1677 | 1487 | 703  | 714  | 1582 | 57.7         |
| 135        | colon                  | M41110 | 1780 | 1369 | 465  | 668  | 1575 | 66.5         |
| 137        | colon                  | M41249 | 1932 | 1288 | 794  | 746  | 1610 | 55.5         |
| 135        | colon                  | M41110 | 1780 | 1369 | 465  | 668  | 1575 | 66.5         |
| 137        | colon                  | M41249 | 1932 | 1288 | 794  | 746  | 1610 | 55.5         |
| 125        | gastric adenocarcinoma | M40339 | 1245 | 1196 | 511  | 536  | 1221 | 46.0         |

|                   |        |      |      |      |      |      |      |      |      |
|-------------------|--------|------|------|------|------|------|------|------|------|
| 12 hepatoblastoma | M31946 | 1326 | 1321 | 781  | 828  | 1324 | 805  | 519  | 34.3 |
| 52 hepatocellular | M35234 | 1591 | 1838 | 629  | 653  | 1715 | 641  | 1074 | 70.9 |
| 94 leiomyosarcoma | M37702 | 1543 | 1542 | 618  | 682  | 1543 | 650  | 893  | 58.9 |
| 31 liposarcoma    | M33702 | 1773 | 1429 | 706  | 727  | 1601 | 717  | 885  | 58.4 |
| 1 lung            | M27795 | 1639 | 1310 | 897  | 784  | 1475 | 841  | 634  | 41.9 |
| 10 lung           | M31464 | 1749 | 1372 | 777  | 790  | 1561 | 784  | 777  | 51.3 |
| 46 lung           | M34780 | 1784 | 1777 | 600  | 626  | 1781 | 613  | 1168 | 77.1 |
| 57 lung           | M35511 | 1167 | 1464 | 777  | 822  | 1316 | 800  | 516  | 34.1 |
| 68 lung           | M35155 | 1334 | 1401 | 713  | 739  | 1368 | 726  | 642  | 42.4 |
| 87 lung           | M37434 | 2407 | 1803 | 837  | 983  | 2105 | 910  | 1195 | 78.9 |
| 62 lymphoma       | M35760 | 1070 | 1450 | 745  | 644  | 1260 | 695  | 566  | 37.3 |
| 2 melanoma        | M30538 | 1393 | 1652 | 830  | 732  | 1523 | 781  | 742  | 49.0 |
| 3 melanoma        | M30625 | 2080 | 1720 | 840  | 923  | 1900 | 882  | 1019 | 67.2 |
| 4 melanoma        | M30848 | 1319 | 1423 | 712  | 704  | 1371 | 708  | 663  | 43.8 |
| 6 melanoma        | M31230 | 2109 | 1771 | 721  | 960  | 1940 | 841  | 1100 | 72.6 |
| 7 melanoma        | M31342 | 1405 | 1232 | 687  | 730  | 1319 | 709  | 610  | 40.3 |
| 8 melanoma        | M31360 | 1843 | 1601 | 864  | 838  | 1722 | 851  | 871  | 57.5 |
| 13 melanoma       | M32115 | 1956 | 1766 | 899  | 844  | 1861 | 872  | 990  | 65.3 |
| 14 melanoma       | M32142 | 1945 | 2041 | 950  | 1036 | 1993 | 993  | 1000 | 66.0 |
| 16 melanoma       | M32170 | 1934 | 1532 | 789  | 706  | 1733 | 748  | 986  | 65.1 |
| 17 melanoma       | M32235 | 1749 | 1415 | 783  | 727  | 1582 | 755  | 827  | 54.6 |
| 18 melanoma       | M32448 | 2316 | 2362 | 1044 | 1028 | 2339 | 1036 | 1303 | 86.0 |
| 19 melanoma       | M32535 | 1748 | 2322 | 1054 | 965  | 2035 | 1010 | 1026 | 67.7 |
| 22 melanoma       | M32936 | 1518 | 1516 | 812  | 744  | 1517 | 778  | 739  | 48.8 |
| 23 melanoma       | M32942 | 1490 | 1544 | 826  | 823  | 1517 | 825  | 693  | 45.7 |
| 24 melanoma       | M33031 | 1338 | 1463 | 986  | 794  | 1401 | 890  | 511  | 33.7 |
| 25 melanoma       | M33090 | 1465 | 1330 | 705  | 863  | 1398 | 784  | 614  | 40.5 |
| 26 melanoma       | M33092 | 1667 | 1674 | 743  | 745  | 1671 | 744  | 927  | 61.2 |
| 27 melanoma       | M33178 | 1916 | 1845 | 915  | 924  | 1881 | 920  | 961  | 63.4 |
| 34 melanoma       | M33957 | 1418 | 1246 | 688  | 619  | 1332 | 654  | 679  | 44.8 |
| 35 melanoma       | M33987 | 1633 | 1552 | 807  | 672  | 1593 | 740  | 853  | 56.3 |
| 40 melanoma       | M34338 | 1753 | 1610 | 822  | 764  | 1682 | 793  | 889  | 58.7 |
| 44 melanoma       | M34710 | 1748 | 1818 | 685  | 779  | 1783 | 732  | 1051 | 69.4 |
| 48 melanoma       | M34977 | 1432 | 1772 | 679  | 618  | 1602 | 649  | 954  | 62.9 |
| 50 melanoma       | M35027 | 1284 | 1100 | 701  | 837  | 1192 | 769  | 423  | 27.9 |
| 56 melanoma       | M35482 | 1269 | 1166 | 559  | 820  | 1218 | 690  | 528  | 34.9 |
| 65 melanoma       | M36042 | 1518 | 1474 | 783  | 892  | 1496 | 838  | 659  | 43.5 |
| 71 melanoma       | M36363 | 1332 | 1653 | 925  | 1003 | 1493 | 964  | 529  | 34.9 |
| 80 melanoma       | M36963 | 1500 | 1595 | 731  | 890  | 1548 | 811  | 737  | 48.7 |
| 82 melanoma       | M37072 | 1717 | 1714 | 912  | 857  | 1716 | 885  | 831  | 54.9 |

|                            |        |      |      |     |      |      |     |      |       |
|----------------------------|--------|------|------|-----|------|------|-----|------|-------|
| 90 melanoma                | M37621 | 1906 | 2097 | 927 | 1068 | 2002 | 998 | 1004 | 86.3  |
| 92 melanoma                | M37649 | 1588 | 1309 | 734 | 963  | 1449 | 849 | 600  | 39.6  |
| 95 melanoma                | M37877 | 921  | 1157 | 462 | 521  | 1039 | 492 | 548  | 36.1  |
| 96 melanoma                | M38072 | 1168 | 1330 | 926 | 711  | 1249 | 819 | 431  | 28.4  |
| 105 melanoma               | M38706 | 1473 | 1227 | 512 | 542  | 1330 | 527 | 823  | 54.3  |
| 107 melanoma               | M38940 | 1354 | 1616 | 645 | 685  | 1485 | 665 | 820  | 54.1  |
| 108 melanoma               | M38978 | 1999 | 2301 | 765 | 812  | 2150 | 789 | 1362 | 89.9  |
| 112 melanoma               | M39083 | 1404 | 1474 | 712 | 732  | 1439 | 722 | 717  | 47.3  |
| 115 melanoma               | M39412 | 2185 | 2010 | 912 | 942  | 2098 | 927 | 1171 | 77.3  |
| 126 melanoma               | M40340 | 1490 | 1537 | 477 | 494  | 1514 | 486 | 1028 | 67.9  |
| 130 melanoma               | M40898 | 2221 | 2034 | 643 | 760  | 2128 | 702 | 1426 | 94.1  |
| 34 melanoma                | M41094 | 1212 | 1113 | 522 | 414  | 1163 | 468 | 695  | 45.9  |
| 136 melanoma               | M41123 | 2233 | 2901 | 700 | 565  | 2567 | 633 | 1935 | 127.7 |
| 138 melanoma               | M41360 | 1271 | 1134 | 593 | 475  | 1203 | 534 | 669  | 44.1  |
| 130 melanoma               | M40898 | 2221 | 2034 | 643 | 760  | 2128 | 702 | 1426 | 94.1  |
| 134 melanoma               | M41094 | 1212 | 1113 | 522 | 414  | 1163 | 468 | 695  | 45.9  |
| 136 melanoma               | M41123 | 2233 | 2901 | 700 | 565  | 2567 | 633 | 1935 | 127.7 |
| 138 melanoma               | M41360 | 1271 | 1134 | 593 | 475  | 1203 | 534 | 669  | 44.1  |
| 9 ovarian                  | M31393 | 1472 | 1595 | 902 | 754  | 1534 | 828 | 706  | 46.6  |
| 117 ovarian                | M39616 | 1933 | 1352 | 645 | 614  | 1643 | 630 | 1013 | 66.9  |
| 124 ovarian adenocarcinoma | M40327 | 1562 | 1435 | 628 | 502  | 1499 | 565 | 934  | 61.6  |
| 11 pancreatic              | M31787 | 1509 | 1578 | 724 | 713  | 1544 | 719 | 825  | 54.5  |
| 73 pancreatic              | M36494 | 1462 | 1243 | 573 | 648  | 1353 | 611 | 742  | 49.0  |
| 86 pancreatic              | M37418 | 1243 | 1137 | 809 | 632  | 1190 | 721 | 470  | 31.0  |
| 30 pancreatic              | M33489 | 1916 | 1930 | 775 | 935  | 1923 | 855 | 1068 | 70.5  |
| 43 rectal                  | M34573 | 1302 | 1247 | 625 | 588  | 1275 | 607 | 668  | 44.1  |
| 47 rectal                  | M34868 | 1445 | 1196 | 683 | 634  | 1321 | 660 | 661  | 43.6  |
| 72 rectal                  | M36437 | 1537 | 1782 | 869 | 767  | 1660 | 818 | 842  | 55.6  |
| 89 rectal                  | M37576 | 1735 | 2126 | 940 | 827  | 1931 | 884 | 1047 | 69.1  |
| 139 rectal                 | M41374 | 876  | 856  | 495 | 424  | 866  | 460 | 407  | 26.8  |
| 139 rectal                 | M41374 | 876  | 856  | 495 | 424  | 866  | 460 | 407  | 26.8  |
| 5 renal cell carcinoma     | M30974 | 1724 | 1990 | 687 | 911  | 1857 | 799 | 1058 | 69.8  |
| 21 renal cell carcinoma    | M32912 | 1605 | 1422 | 745 | 747  | 1514 | 746 | 768  | 50.7  |
| 28 renal cell carcinoma    | M33297 | 1590 | 1739 | 704 | 802  | 1665 | 753 | 912  | 60.2  |
| 29 renal cell carcinoma    | M33403 | 1979 | 1897 | 768 | 789  | 1938 | 779 | 1160 | 76.5  |
| 33 renal cell carcinoma    | M33927 | 1514 | 1708 | 759 | 658  | 1611 | 709 | 903  | 59.6  |
| 36 renal cell carcinoma    | M33992 | 1867 | 1822 | 855 | 856  | 1845 | 856 | 989  | 65.3  |
| 39 renal cell carcinoma    | M34219 | 1358 | 1535 | 738 | 637  | 1447 | 688 | 759  | 50.1  |
| 42 renal cell carcinoma    | M34379 | 1647 | 1411 | 629 | 820  | 1529 | 725 | 805  | 53.1  |
| 45 renal cell carcinoma    | M34749 | 1468 | 1885 | 872 | 779  | 1677 | 826 | 851  | 56.2  |

|                          |        |      |      |      |     |      |     |      |       |
|--------------------------|--------|------|------|------|-----|------|-----|------|-------|
| 49 renal cell carcinoma  | M35022 | 1885 | 1698 | 1001 | 936 | 1792 | 969 | 823  | 54.3  |
| 55 renal cell carcinoma  | M35380 | 1745 | 1931 | 969  | 833 | 1838 | 901 | 937  | 61.9  |
| 60 renal cell carcinoma  | M35658 | 2251 | 2426 | 791  | 746 | 2339 | 769 | 1570 | 103.7 |
| 61 renal cell carcinoma  | M35713 | 1492 | 1546 | 888  | 955 | 1519 | 922 | 598  | 39.4  |
| 66 renal cell carcinoma  | M36060 | 1488 | 1307 | 933  | 939 | 1398 | 936 | 462  | 30.5  |
| 70 renal cell carcinoma  | M36330 | 2800 | 2483 | 867  | 749 | 2642 | 808 | 1834 | 121.0 |
| 78 renal cell carcinoma  | M36787 | 1589 | 1540 | 904  | 756 | 1565 | 830 | 735  | 48.5  |
| 79 renal cell carcinoma  | M36812 | 2011 | 1660 | 710  | 658 | 1836 | 684 | 1152 | 76.0  |
| 81 renal cell carcinoma  | M37050 | 1519 | 1453 | 848  | 578 | 1486 | 713 | 773  | 51.0  |
| 84 renal cell carcinoma  | M37274 | 1402 | 1177 | 742  | 512 | 1290 | 627 | 663  | 43.7  |
| 85 renal cell carcinoma  | M37361 | 1317 | 1586 | 654  | 621 | 1452 | 638 | 814  | 53.7  |
| 93 renal cell carcinoma  | M37660 | 1501 | 1665 | 660  | 799 | 1583 | 730 | 854  | 56.3  |
| 97 renal cell carcinoma  | M38334 | 1582 | 1578 | 602  | 645 | 1580 | 624 | 957  | 63.1  |
| 100 renal cell carcinoma | M38564 | 1882 | 1560 | 621  | 645 | 1721 | 633 | 1088 | 71.8  |
| 101 renal cell carcinoma | M38585 | 1478 | 1206 | 542  | 561 | 1342 | 552 | 791  | 52.2  |
| 102 renal cell carcinoma | M38677 | 1807 | 1965 | 745  | 748 | 1886 | 747 | 1140 | 75.2  |
| 104 renal cell carcinoma | M38698 | 1279 | 1310 | 451  | 462 | 1295 | 457 | 838  | 55.3  |
| 110 renal cell carcinoma | M39059 | 2678 | 2550 | 856  | 912 | 2614 | 884 | 1730 | 114.2 |
| 111 renal cell carcinoma | M39067 | 1428 | 1343 | 645  | 668 | 1386 | 657 | 729  | 48.1  |
| 113 renal cell carcinoma | M39127 | 2038 | 1840 | 912  | 912 | 1939 | 912 | 1027 | 67.8  |
| 114 renal cell carcinoma | M39305 | 2125 | 2311 | 984  | 912 | 2218 | 948 | 1270 | 83.8  |
| 119 renal cell carcinoma | M39884 | 1639 | 1232 | 465  | 485 | 1436 | 475 | 961  | 63.4  |
| 120 renal cell carcinoma | M39921 | 1957 | 1799 | 703  | 712 | 1878 | 708 | 1171 | 77.3  |
| 121 renal cell carcinoma | M39939 | 1228 | 1145 | 642  | 728 | 1187 | 685 | 502  | 33.1  |
| 122 renal cell carcinoma | M40045 | 2018 | 1856 | 583  | 700 | 1937 | 642 | 1296 | 85.5  |
| 128 renal cell carcinoma | M40696 | 1554 | 1542 | 670  | 728 | 1548 | 699 | 849  | 56.1  |
| 129 renal cell carcinoma | M40705 | 1659 | 1671 | 620  | 637 | 1665 | 629 | 1037 | 68.4  |
| 132 renal cell carcinoma | M41054 | 1457 | 1502 | 499  | 564 | 1480 | 532 | 948  | 62.6  |
| 133 renal cell carcinoma | M41079 | 1133 | 1054 | 778  | 648 | 1094 | 713 | 381  | 25.1  |
| 140 renal cell carcinoma | M41421 | 2555 | 2659 | 795  | 691 | 2607 | 743 | 1864 | 123.1 |
| 129 renal cell carcinoma | M40705 | 1659 | 1671 | 620  | 637 | 1665 | 629 | 1037 | 68.4  |
| 132 renal cell carcinoma | M41054 | 1457 | 1502 | 499  | 564 | 1480 | 532 | 948  | 62.6  |
| 133 renal cell carcinoma | M41079 | 1133 | 1054 | 778  | 648 | 1094 | 713 | 381  | 25.1  |
| 140 renal cell carcinoma | M41421 | 2555 | 2659 | 795  | 691 | 2607 | 743 | 1864 | 123.1 |
| 127 sarcoma              | M40404 | 1024 | 947  | 571  | 550 | 986  | 561 | 425  | 28.1  |
| 131 synorial cell        | M40909 | 2073 | 2503 | 786  | 816 | 2288 | 801 | 1487 | 98.2  |
| 131 synorial cell        | M40909 | 2073 | 2503 | 786  | 816 | 2288 | 801 | 1487 | 98.2  |
| 15 thymoma               | M32165 | 1598 | 1512 | 945  | 806 | 1555 | 876 | 680  | 44.9  |